



State of Washington
DRAFT
REPORT OF EXAMINATION
FOR WATER RIGHT APPLICATION

PRIORITY DATE
6/3/2011

WATER RIGHT NUMBER
G3-30641

MAILING ADDRESS
Jerry and Lois Sheffels
8505 Douglas Road E
Wilbur WA 99185

SITE ADDRESS (IF DIFFERENT)
17806 N. Westshore Road
Nine Mile Falls WA 99026

Quantity Authorized for Withdrawal or Diversion

WITHDRAWAL OR DIVERSION RATE
10

UNITS
GPM

ANNUAL QUANTITY (AF/YR)
0

10 gallons per minute continuously for nonconsumptive heat exchange

Purpose

PURPOSE	WITHDRAWAL OR DIVERSION RATE			ANNUAL QUANTITY (AF/YR)		PERIOD OF USE (mm/dd)
	ADDITIVE	NON-ADDITIVE	UNITS	ADDITIVE	NON-ADDITIVE	
Heat exchange	10		GPM			01/01 - 12/31

Source Location

COUNTY	WATERBODY	TRIBUTARY TO				WATER RESOURCE INVENTORY AREA		
SPOKANE	GROUNDWATER					54-LOWER SPOKANE		
SOURCE FACILITY/DEVICE	PARCEL	WELL TAG	TWP	RNG	SEC	QQ Q	LATITUDE	LONGITUDE
Well	172230115	BCL199	27 N.	41 E.	22	SE¼SW¼	47.81967°	-117.61875°
								Datum: NAD83/WGS84

A well 1250 feet North and 1960 feet East from the SW corner of Section 22

Place of Use (See Attached Map)

PARCELS (NOT LISTED FOR SERVICE AREAS)

17223.0115

LEGAL DESCRIPTION OF AUTHORIZED PLACE OF USE

Lot 15 Block 1 of the Cutler Eisenbarth Subdivision in the SE¼SW¼ of Section 22 T. 27 N., R. 41 E.W.M.

Proposed Works

The subject proposal involves the withdrawal of water from an existing permit-exempt well for the purpose of heat exchange. The water would be pumped into a PVC line to the Sheffels' home. The water would be run through a heat pump exchange unit for the purpose of radiant floor heating and forced air ventilation and cooling. The water would return to an injection site located approximately 50 feet south of the subject well.

Development Schedule

BEGIN PROJECT	COMPLETE PROJECT	PUT WATER TO FULL USE
Started	December 1, 2012	December 1, 2013

Provisions

Wells, Well Logs and Well Construction Standards

All wells constructed in the state shall meet the construction requirements of WAC 173-160 titled "Minimum Standards for the Construction and Maintenance of Wells" and RCW 18.104 titled "Water Well Construction". Any well which is unusable, abandoned, or whose use has been permanently discontinued, or which is in such disrepair that its continued use is impractical or is an environmental, safety or public health hazard shall be decommissioned.

All wells shall be tagged with a Department of Ecology unique well identification number. If you have an existing well and it does not have a tag, please contact the well-drilling coordinator at the regional Department of Ecology office issuing this decision. This tag shall remain attached to the well. If you are required to submit water measuring reports, reference this tag number.

Installation and maintenance of an access port as described in WAC 173-160- 291(3) is required.

Measurements, Monitoring, Metering and Reporting

An approved measuring device shall be installed and maintained for each of the sources identified by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", WAC 173-173.

WAC 173-173 describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition the Department of Ecology for modifications to some of the requirements.

Underground Injection Control Program

The subject infiltration system shall be registered with Ecology's Underground Injection Control Program prior to discharge of any water withdrawn under this authorization.

<http://www.ecy.wa.gov/pubs/wac173218.pdf>

This use is considered non-consumptive. The withdrawn water shall be returned to the same aquifer in close proximity in time and space to the location from which it was taken.

Water Use Efficiency

Use of water under this authorization shall be contingent upon the water right holder's maintenance of efficient water delivery systems and use of up-to-date water conservation practices consistent with established regulation requirements and facility capabilities.

Proof of Appropriation

The water right holder shall file the notice of Proof of Appropriation of water (under which the certificate of water right is issued) when the permanent distribution system has been constructed and the quantity of water required by the project has been put to full beneficial use. The certificate will reflect the extent of the project perfected within the limitations of the permit. Elements of a proof inspection may include, as appropriate, the source, system instantaneous capacity, beneficial use(s), annual quantity, place of use, and satisfaction of provisions.

Schedule and Inspections

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the project location, and to inspect at reasonable times, records of water use, wells, diversions, measuring devices and associated distribution systems for compliance with water law.

Findings of Facts

Upon reviewing the investigator's report, I find all facts, relevant and material to the subject application, have been thoroughly investigated. Furthermore, I concur with the investigator that water is available from the source in question; that there will be no impairment of existing rights; that the purpose(s) of use are beneficial; and that there will be no detriment to the public interest.

Therefore, I order approval of Application No. G3-30641, subject to existing rights and the provisions specified above.

Your Right To Appeal

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do the following within 30 days of the date of receipt of the Order.

File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.

- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.
- You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel Road SW Suite 301 Tumwater, WA 98501	Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903

Signed at Spokane, Washington, this day of 2011.

Keith L. Stoffel, Section Manager
 Water Resources Program

DRAFT

For additional information visit the Environmental Hearings Office Website: <http://www.eho.wa.gov>. To find laws and agency rules visit the Washington State Legislature Website: <http://www1.leg.wa.gov/CodeReviser>.

W/Draft ROEs/MacLennan/2011/G3-30641 Sheffels

INVESTIGATOR'S REPORT
 Application for Water Right -- Sheffels
 Water Right Control Number G3-30641
 Jeff MacLennan
 Water Resources (ERO), Department of Ecology

BACKGROUND

Description and Purpose of Proposed Application

On 06/03/2011 the Washington State Department of Ecology (Ecology) accepted Water Right Application Number G3-30641 submitted by Jerry and Lois Sheffels. Attributes of the application are presented below in Table 1. Lands covered by the proposed place of use are owned by the Sheffels Family Trust, parcel number 17223.0115. The points of withdrawal and injection are located on the same land.

The proposed water use is nonconsumptive heat exchange.

Table 1 Application Summary

Attributes		Summary
Name	Sheffels	
Priority Date	6/3/2011	
Instantaneous Quantity	10 gpm	
Annual Quantity	Non-consumptive	
Purpose of Use	Heat Exchange	
Period of Use	01/01-12/31	
Place of Use	Portions of the SE¼SW¼ of Section 22, T. 27 N., R. 41 E.W.M.	

Table 2 Proposed Sources of Withdrawal or Diversion

Source Name	Parcel	Well Tag	Twn	Rng	Sec	QQ Q	Latitude	Longitude
WELL	17223.0115	BCL199	27 N.	41 E.	22	SE¼SW¼	47.81967°	-117.61875°

Expediting Process

Normally, new water right applications are acted upon in the order in which they are received – by priority date. Certain new water right applications are afforded priority processing if they meet certain conditions. With respect to this application, WAC 173-152-050(2) provides that an application may be processed prior to competing applications if the department determines that:

"The proposed water use is nonconsumptive and if approved would substantially enhance or protect the quality of the natural environment." (WAC 173-152-050(2)(b))

Ecology also has a policy titled "Priority Processing of Heat Pump Applications" – POL 2020. This Policy reiterates that an application for withdrawal of water for heat exchange purposes may be afforded priority processing provided that the conditions set forth in WAC 173-152-050(2)(b) are met.

1. Nonconsumptive Use: Ecology Water Resource Program Policy POL-1020 governs determination of consumptive vs. nonconsumptive water use. The Policy defines ground water use as nonconsumptive when:

"...there is no diminishment of the source. In order not to diminish the source, the withdrawn water is injected or infiltrated immediately back to the aquifer. The water must be returned in the same quantity and quality (excluding temperature change) at a point in close proximity to the withdrawal wells. An example of this use is a heat pump."

2. Substantially Enhance or Protect the Natural Environment: An open-loop water source exchange system such as that proposed generally provides a considerable improvement in energy efficiency over comparable traditional systems. There is an energy savings over air-source heat pumps, particularly during periods of below-freezing weather, and there is no direct combustion associated with these systems as there would be with coal, oil or natural gas. The energy savings and reduction of greenhouse gases that this type of system provides over conventional heating and cooling systems can be considered as substantially enhancing the natural environment.

The proposed open-loop heat exchange system meets the criteria set forth in WAC 173-152-050(2)(b) and is afforded priority processing. Priority processing was approved by Keith Stoffel, Water Resources Section Manager, Eastern Regional Office, on September 27, 2011.

Legal Requirements for Approval of Appropriation of Water

RCWs 90.03 and 90.44 authorize the appropriation of public water for beneficial use and describes the process for obtaining water rights. Laws governing the water right permitting process are contained in RCW 90.03.250 through 90.03.340 and RCW 90.44.050. In accordance with RCW 90.03.290, determinations must be made on the following four criteria in order for an application for water rights to be approved:

- There must be no impairment of existing rights
- Water must be available
- The water use must be beneficial
- The water use must not be detrimental to the public interest.

This report serves as the written findings of fact concerning all things investigated regarding Water Right Application Number G3-30641.

Public Notice

RCW 90.03.280 requires that notice of a water right application be published once a week, for two consecutive weeks, in a newspaper of general circulation in the area where the water is to be stored,

diverted and used. Notice of this application was published in the *Deer Park Tribune* during the weeks of August 24th and August 31st, 2011; no letters of concern or protest were received.

State Environmental Policy Act (SEPA)

A water right application is subject to a SEPA threshold determination (i.e., an evaluation whether there are likely to be significant adverse environmental impacts) if any one of the following conditions are met.

- (a) It is a surface water right application for more than 1 cubic foot per second, unless that project is for agricultural irrigation, in which case the threshold is increased to 50 cubic feet per second, so long as that irrigation project will not receive public subsidies;
- (b) It is a groundwater right application for more than 2,250 gallons per minute;
- (c) It is an application that, in combination with other water right applications for the same project, collectively exceed the amounts above;
- (d) It is a part of a larger proposal that is subject to SEPA for other reasons (e.g., the need to obtain other permits that are not exempt from SEPA);
- (e) It is part of a series of exempt actions that, together, trigger the need to do a threshold determination, as defined under WAC 197-11-305.

Because this application does not meet any of these conditions, it is categorically exempt from SEPA and a threshold determination is not required.

INVESTIGATION

There were two issues associated with this application: the rate and the purpose. Ecology employee Kathryn Ryf clarified a misunderstanding of the numbers given for Rate. Under Rate the applicant checked gallons per minute as the units and wrote in "5,000" for "house use" and "10,000" for "heat/air." Ms. Ryf met with the applicant on June 27, 2011, to discuss what appeared to be a misunderstanding. The applicant changed the rate to 15 gpm for house use and 10 gpm for heat/air. During a review of the intended purpose with Ecology employee, Jeff MacLennan, on August 12th, 2011, the applicant dropped the "house use" purpose from the application. His intent is to use the well for permit exempt purposes and, therefore, not request a permit for household uses. With clarifying the rate and reducing the purpose, the application now asks for 10 gpm with no acre-feet per year for heat exchange uses.

Jeff MacLennan met with Mr. Larry Andrews of Andrews Mechanical, Inc., the lead engineer for the installation of the heat exchange system on August 15, 2011, on the Sheffels' building site. Mr. Andrews is acting as the Sheffels' representative on this project. The site is located on the Long Lake Dam reservoir shoreline about five miles west of Nine Mile Falls, Washington. The surrounding topography is a low, flat bench. A well already existing on this lot will be used as the source well for this project. The applicant estimates the well was drilled in 1964 or 1965. The heat exchange process calls for pumping water out of the existing well, passing it through a heat pump exchange unit for the purpose of forced air ventilation, and then injecting it back into the ground through a new well located approximately 45 feet southeast of the source well. The injection well has not been drilled at this time.

The intent is to have the full discharge from the heat exchange system return to the source aquifer within a short time of being withdraw. By doing this, the purpose is considered a nonconsumptive use. The requirement for the water to be returned to the same location from which it was withdrawn

without any changes to its chemical content was emphasized to Mr. Andrews. He reaffirmed his understanding of this requirement. Mr. Andrews is also aware Underground Injection Control registration is required. His company was informed on September 12th, 2011, of the online process to register an injection well.

According to Mr. Andrews, 10 gpm provides sufficient margin to meet any requirements of the heat exchange system. A 4-hour pump test was conducted by Dickerson Pump & Irrigation in 2010 resulting in an average well production of 15.22 gpm.

The existing well will also be used for domestic purposes under RCW 90.44.050. Municipal water is available through the Stevens County PUD; according to Mr. Andrews, it will not be used. This water right covers only the nonconsumptive use of water for heat exchange purposes. The well has sufficient capacity to satisfy both purposes. Mr. Andrews explained that the pipes providing water for domestic use would be completely separate from those supplying water for heat exchange purposes. However, he went on to describe how the pipes for both systems would pass through the heat exchange unit thereby allowing heat exchange to occur when water is used for household purposes.

GPS fixes were made on the source well's and the potential injection well's locations on August 15th, 2011.

Other Rights Overlapping or Near the Place of Use

Tables 3 and 4 below were derived from a search of Ecology databases focused on the Sections 20-22, 27, and 28, Township 27 N., Range 41 E.W.M. south of the Spokane River. These sections encompass the lowland area where the applicant's POU is located.

Table 3 Rights Overlapping the Place of Use

Water Right Number	Holder	Priority Date	Qi (gpm)	Qa (af)	Purpose	Comment
CG3-01414C	Stevens County PUD	1/4/1970	1100	285	DM	See * below
G3-27994	Stevens County PUD	4/8/1985	1100	285	MU	See * below
CG3-01587C	Stevens County PUD	1/9/1969	500	61.6	MU	
G3-28672C	Stevens County PUD	6/1/1989	1000	200	MU	
G3-29657	Stevens County PUD	12/27/1993	1000	1000	MU	See ** below
CGWC4149-A	Cutler	3/3/1960	1350	800	IR	577 acres irrigated
CGWC2926-A	Cutler	3/16/1955	3500	2100	IR	600 acres irrigated

*The total amount of water authorized for withdrawal under CG3-0141C and G3-27994 is limited to 1100 gpm and 285 af

** G3-29657 annual quantity: 666 acre-feet primary and 334 acre-feet supplemental

Table 4 Rights near the Place of Use

Water Right Number	Holder	Priority Date	Qi (gpm)	Qa (af)	Purpose
S3-23418C	Burkhardt	6/5/1974	4.5	1	Domestic Supply
G3-00641C	Cutler	2/10/1972	80	35	Irrigation
G3-00651C	Cutler	2/10/1972	12	3	Domestic Supply

All of the above water rights have their sources located in the same lowland bench containing the applicant's well. Stevens County PUD and Cutler own rights overlapping the Sheffels' POU. Stevens County PUD provides municipal water to the subdivision in which the Sheffels' lot is located. Mr. Maynard Cutler holds irrigation rights which also include this subdivision. However, in CGWC4149-A, Mr. Cutler explained he never irrigated that land; that it was just part of the property description prior to subdividing the land. There are also ten claims for domestic, stockwater, and/or irrigation of up to two acres within this area.

Impairment Considerations

Impairment is an adverse impact on the physical availability of water for a beneficial use that is entitled to protection. A water right application may not be approved if it would:

- Interrupt or interfere with the availability of water to an adequately constructed groundwater withdrawal facility of an existing right. An adequately constructed groundwater withdrawal facility is one that (a) is constructed in compliance with well construction requirements and (b) fully penetrates the saturated zone of an aquifer or withdraws water from a reasonable and feasible pumping lift.
- Interrupt or interfere with the availability of water at the authorized point of diversion of a surface water right. A surface water right conditioned with instream flows may be impaired if a proposed use or change would cause the flow of the stream to fall to or below the instream flow more frequently or for a longer duration than was previously the case.
- Interrupt or interfere with the flow of water allocated by rule, water rights, or court decree to instream flows. Degrade the water quality of the source to the point that the water is unsuitable for beneficial use by existing users (e.g., via sea water intrusion).

There is currently an existing permit-exempt well on the property. There has not been a well interference issue documented in the area of this well. As can be seen in the table above, there are several municipal and irrigation water rights with places of use that overlap this project. There are also ten claims and one water right certificate for domestic use and irrigation projects of two acres or less within a quarter mile. All wells within a half mile of the point of withdrawal are drawing water from sands and gravels which are likely to be in hydrologic connectivity with the Spokane River. Because this is a non-consumption project, it will not impair any existing rights.

Water Availability

For water to be available for appropriation, it must be both physically and legally available.

Physical availability

For water to be physically available for appropriation there must be ground or surface water present in quantities and quality and on a sufficiently frequent basis to provide a reasonably reliable source for the requested beneficial use or uses. In addition, the following factors are considered:

- Volume of water represented by senior water rights, including federal or tribal reserved rights or claims;
- Water right claims registered under Chapter 90.14 RCW
- Ground water uses established in accordance with Chapter 90.44 RCW, including those that are exempt from the requirement to obtain a permit; and
- Potential riparian water rights, including non-diversionary stock water.

Lack of data indicating water usage can also be a consideration in determining water availability, if the department cannot ascertain the extent to which existing rights are consistently utilized and cannot affirmatively find that water is available for further appropriation.

The proposed use is considered non-consumptive because the water withdrawn will be returned to the same aquifer in close proximity in time and space to the location from which it was taken.

Legal availability

To determine whether water is legally available for appropriation, the following factors are considered:

- Regional water management plans – which may specifically close certain water bodies to further appropriation.
- Existing rights – which may already appropriate physically available water.
- Fisheries and other instream uses (e.g., recreation and navigation). Instream needs, including instream and base flows set by regulation. Water is not available for out of stream uses where further reducing the flow level of surface water would be detrimental to existing fishery resources.
- The Department may deny an application for a new appropriation in a drainage where adjudicated rights exceed the average low flow supply, even if the prior rights are not presently being exercised. Water would not become available for appropriation until existing rights are relinquished for non-use by state proceedings.

As indicated above, the proposed project is non-consumptive. Since the water use is non-consumptive, it will have no physical impact to the source, which is an aquifer near and possibly in hydrologic continuity with the Spokane River. The use will have no impact to the existing flow of the river or water right users. In addition, there will be no impacts to existing rights, reservations of water, basin management plans, instream flows or other instream uses. Groundwater is available for the proposed non-consumptive heat exchange use both legally and physically.

Beneficial Use

The use of water for heat exchange purposes is defined in statute as a beneficial use (RCW 90.54.020(1) and Ecology Policy POL-2020).

Public Interest Considerations

Consideration of Protests and Comments

No letters of concern were filed against this application.

The proposed withdrawal of water is considered a nonconsumptive appropriation. Approval of this application would result in an overall benefit to the natural environment by increasing the energy efficiency of the heating and cooling system of the home. There has been no public expression of protest or concern regarding the subject proposal, and no findings through this investigation indicating that there would be any detrimental impact to the public welfare through issuance of the water right. With that, this use is considered to be in the public interest.

Conclusions

In conclusion, water is available for appropriation, and the proposed use would be a beneficial use, would not impair existing water rights, and would not be detrimental to the public welfare. This examiner finds that water is available for appropriation for nonconsumptive continuous heat exchange in the amount of 10 gallons per minute.

RECOMMENDATIONS

Based on the above investigation and conclusions, I recommend that this request for a water right be approved in the amounts and within the limitations listed below and subject to the provisions listed above.

Purpose of Use and Authorized Quantities

The amount of water recommended is a maximum limit and the water user may only use that amount of water within the specified limit that is reasonable and beneficial:

10 gpm

0 acre-feet per year

Nonconsumptive Heat Exchange Purpose

Point of Withdrawal

A well within the SE $\frac{1}{4}$ SW $\frac{1}{4}$, Section 22, Township 27 North, Range 41 East Willamette Meridian

Place of Use

As described on Page 1 of this Report of Examination.

Jeff MacLennan, Report Writer

Date

If you need this publication in an alternate format, please call the Water Resources Program at (360) 407-6600. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.